NRHP- 12/02/2002

1. Name of Property

historic name: Cape Henry (Second Tower) Light Station

other names/site number:

2. Location

street & number: N/A not for publication: N/A

city or town: Fort Story, Virginia Beach vicinity X

state: Virginia code: VA county: Virginia Beach City code: 810

zip code:

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this nomination and request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property meets the National Register Criteria. I recommend that this property be considered significant nationally. (___ See continuation sheet for additional comments.)

Captain, U. S. Coast Guard, ACTING
Chief, Office of Civil Engineering 2/22/02
Signature of certifying official Date

Department of Transportation, U.S. Coast Guard
State or Federal agency and bureau

In my opinion, the property ____ meets ____ does not meet the National Register criteria. (___ See continuation sheet for additional comments.)

_____ _____
Signature of commenting or other official Date

4. National Park Service Certification

I, hereby certify that this property is:

____ entered in the National Register _____
___ See continuation sheet.
____ determined eligible for the _____
National Register
___ See continuation sheet.
____ determined not eligible for the _____
National Register
____ removed from the National Register _____

____ other (explain): _____

_____ _____ _____
Signature of Keeper Date of Action

5. Classification

Ownership of Property (Check as many boxes as apply)

___ private
___ public-local
___ public-State
_X_ public-Federal

Category of Property (Check only one box)

___ building(s)
_X_ district
___ site
___ structure
___ object

Number of Resources within Property

Contributing	Noncontributing	
_____	_____	buildings
_____	_____	sites
_8_	_____	structures
_____	_____	objects
_8_	_0_	Total

Number of contributing resources previously listed in the National Register 1 (Cape Henry (1st tower) Lighthouse is a National Historic Landmark)

Name of related multiple property listing: Light Stations of the United States

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6. Function or Use

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Historic Functions (Enter categories from instructions)
Cat: Transportation Sub: Water-related

Current Functions (Enter categories from instructions)
Cat: Transportation Sub: Water-related

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7. Description

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Architectural Classification (Enter categories from instructions):
No Style

Materials (Enter categories from instructions):
foundation: granite
roof: metal
walls: cast iron with brick lining
other: lantern: metal

Narrative Description[1] (Describe the historic and current condition of the property.)

Description Summary

The second tower for the Cape Henry Light Station was built in 1881. A granite foundation supports a 163-foot-tall tower shaped in the form of a truncated frustrum of an octagon surmounted by a one-story black iron lantern which contains a first-order Fresnel lens. Associated station structures include three circa-1881 modified keeper's dwellings, a modified 1881 brick fog signal building, a 1892 brick oil house, a 1905 coal house, and a modified 1935 fog signal testing laboratory. The light station is located on Cape Henry on the south side of the Chesapeake Bay entrance. Access to the property is through Fort Story, Virginia Beach, Virginia.

[1] Much of this narrative is derived from a section of a condition assesment report on Cape Henry (second tower) Light Station prepared by the National Park Service's Historic Preservation Training Center in 1995/1996. This report is on file at the National Maritime Initiative office, National Register, History, and Education Programs, National Park Service, Washington, D.C.

Contributing Structures

1881 cast-iron brick-lined tower
1881 modified frame principal keeper's quarters
1881 modified frame first assistant keeper's quarters
1881 modified frame second assistant keeper's quarters
1881 modified brick fog signal building
1892 brick oil house
1905 frame coal house
1935 modified concrete fog signal testing laboratory

Lighthouse Tower, Exterior

The foundation is granite and the tower is built of cast-iron plate sections which are bolted together. The first tier of plates are bolted to the granite foundation to secure the tower to the foundation. Metal disks attached to the bottom ends of the bolts and overlaid by granite blocks insure the bolts will not work free. The plates vary in thickness from 1½ inches at the lower sections, each weighing approximately 1,200 pounds, to ½-inch-thick plates in the upper sections. The estimated weight of the total ironwork is 1,700,000 pounds including 7,000 pounds of bolts.[2] This is a prefabricated tower designed to be taken down and reerected if needed.[3]

The entrance and base windows are decorated with cast-iron segmental pediments and elaborate moldings. Over the door is the date "1879," the year construction began, with a star on each side. The double-door entrance is 10 feet wide and 10 feet high. The upper and lower half of each face of the tower is alternately painted in black and white vertical stripes, providing a daymark which is easily distinguished from the nearly all-white Cape Charles tower to the north and the all-red brick tower at Currituck Beach to the south.[4]

Lighthouse Tower, Interior

The outer cast-iron plates are lined with sheet iron. The cast-iron plates and inner stair cylinder of wrought iron are connected by radial cast-iron abutments. The second Cape Henry light tower displays aesthetics not ordinarily found in government-built utilitarian structures. For example, the multi-colored floor tiles, columns, and interior walls with semicircular niches on the ground level are more typical of what one might expect in a mansion. It is hard to imagine such elaborate recesses were built merely to hold oil drums. The inner sheet-iron walls are ⅜-inch thick. The staircase has 180 steps and six landings. There are another 27

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[2] Dudley Witney, *The Lighthouse*, New York Graphic Society, Boston (1975), p. 216.

[3] Arnold Burgess Johnson, *The Modern Light-house Service*, Washington, D.C., Government Printing Office, 1890, p. 245.

[4] Elinor Dewire, "Old Cape Henry Lighthouse," no date, no publisher, but believed to be an article from *Lighthouse Digest*.

steps from the service room to the watch room and finally to the lantern room, making a total of 207 steps.

Lantern

The first-order lantern is made of cast and wrought iron with bronze sashes and copper roof. The classical first-order Fresnel lens is a non-rotating or fixed barrel-type lens; it continues to function as an active aid to navigation. Stamped on the middle section of the bottom frame of panel # 1 is:

BARBIER & FENESTRE
PARIS - 1880

On the middle section of panel # 8 is:

BF

$\overline{66}$

These two panels are side by side and face landward, having no top or bottom panels. All the panel frames have corresponding numbers in the lower corners of the upper panel frames and letters in the upper corners of the lower panel frames which correspond to the same numbers and letters on the middle panel frames of each section. The upper panel frames also have "BARBER & FENESTRE" stamped on the center of the bottom frame and the lower panel frames have the same stamped in the center of the middle frames. There is no lettering or numbering on the inside of the frames. Each panel of the central drum consists of 17 elements; with 18 prisms in each panel above the central drum and eight prisms in each panel below the central drum except for panel 1 and 8 as discussed above. The red sector is made by the placement of red plexiglass panels along the inside of the storm panes.

Principal keeper's quarters

A 2½-story balloon frame dwelling sided with brick, now referred to as "Quarters A," was completed in 1881.

First assistant keeper's quarters

A 2½-story asbestos-shingle-sided dwelling, now referred to as "Quarters B," was completed about 1881. Built on brick piers with brick chimneys this structure originally was clapboard sided with gable ends covered with decorative board-and-batten and gingerbread. This is now covered and/or removed. The roof was originally wood shingle.

Second assistant keeper's quarters

A 2½-story asbestos-shingle-sided dwelling, now referred to as "Quarters C," was completed about 1881. Built on brick piers with brick chimneys this structure originally was clapboard

sided with gable ends covered with decorative board-and-batten and gingerbread. This is now covered and/or removed. The roof was originally wood shingle.

Coal house

A wooden coal house with tin roof was built in 1905. This is believed to be the extant board-and-batten shed with red roof.

Oil house

In 1892 a brick oil house with capacity for 500 five-gallon cans was built. Sheet piling and a brick wall was built around the oil house in 1897 to keep sand from piling up on it. A 1911 report states the oil house is a brick 14-foot by 12-foot in plan structure with a capacity to house 700 five-gallon cans located 100 feet "west, southwest" from the tower. Despite the difference in capacity to house oil cans, it is believed these descriptions are of the same structure. The oil house retains its original ventilation hood and pipes; it is unusual for these original fabric members to survive.

Fog signal structure

This 1881 structure was originally built as a fog signal building, later converted to a garage, and now used as a work shop/storehouse. Lighthouse Board annual reports and photographs of the station reveal that this building was a 1½-story brick structure with a 25-foot-square room for the engines and sirens, with a 25-foot by 9-foot, 6-inches in plan attached shed, possibly board-and-batten sided, with a galvanized corrugated sheet metal roof. A two-story wooden tower addition sided with horizontal clapboards, set on a concrete foundation, and covered with a tin roof was added in 1905. Surmounted from the tower was a large trumpet. While the number and arrangement of horns no doubt changed over time, once a complicated three sets of three horns each and two smaller sets of horns as well as two single horns were staged in front of the fog signal building. A 3,000- to 3,500-gallon brick cistern was built next to the fog signal building to supply water for the steam fog signal. About 1909 the fog signal building was modified into a oil-fired compressed air fog signal plant. A 1911 report states the fog signal building was a "one-story brick building with iron truss roof and corrugated iron cover." At a later time this was crossed out and described as "one story concrete bldg. with pent house tank room, & steel tower above." This is probably referring to the 1935 testing laboratory.[5]

Fog signal testing laboratory

A reinforced concrete fog signal testing laboratory was built in 1935. The lower level is used by the station as an office, workshop, and back up generator. The original tower has been removed and a new concrete tower built and used by bay pilots as a point of communication.

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[5] "Description of Cape Henry Light Station, July 5, 1911, copy in Cape Henry Light file, National Maritime Initiative Office, National Park Service, Washington, D.C.

Previously Existing Structures

A new summer kitchen was constructed in 1892. In 1897 a new summer kitchen and new storehouse was built, as was 556 feet of new plank walks. A 1911 report describes two storehouses and three summer kitchens in existence. The standing shed just behind and north of the second assistant keeper's dwelling may be a former summer kitchen. A radio fog signal was installed in 1923. The world's first synchronized radiobeacon consisting of a tall tower with several radial tie downs located to the northwest of the tower was put into commission in 1929. A 1924 plot of the station shows five additional sheds were once located in a line running east to west behind Quarters "B" and "C". A cistern was located between the fog signal testing laboratory and brick storage building (to provide water for the steam operated fog signal) and one outside the enclosed station area northwest of the tower. A wind mill water pump was also built at the station but its date of use is unknown.

Conclusion

This station has previously been determined eligible for listing by the Virginia State Historic Preservation Officer (SHPO).[6] The tower retains its original first-order lens. Other than a modern partition wall with modern electrical components in the watch room, it retains over 85 to 90 percent of its original fabric. The oil house is rare in that it retains its original oil fume ceiling hood. The original fog signal building, now used as a garage, is one of only a few pre-turn-of-the-century fog signal structures extant on the East Coast. The remaining station structures have been modified over the years and have low to moderate historic integrity. Taken as a whole, however, the ancillary buildings represent a light station complex which is largely intact. Few stations, especially on the East Coast, possess such variety.

[6]Letter dated Sept. 24, 1993 from James Christian Hill, Commonwealth of Virginia Department of Historic Resources in National Maritime Initiative inventory file for Cape Henry (2nd Tower) Light.

8. Statement of Significance

Applicable National Register Criteria (Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

X	A	Property is associated with events that have made a significant contribution to the broad patterns of our history.
____	B	Property is associated with the lives of persons significant in our past.
X	C	Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
____	D	Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations (Mark "X" in all the boxes that apply.)

____ A	owned by a religious institution or used for religious purposes.
____ B	removed from its original location.
____ C	a birthplace or a grave.
____ D	a cemetery.
____ E	a reconstructed building, object, or structure.
____ F	a commemorative property.
____ G	less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance (Enter categories from instructions):

Maritime History
Transportation
Architecture

Period of Significance: 1881-1946

Significant Dates: 1881-1984

Significant Person (Complete if Criterion B is marked above): N/A

Cultural Affiliation: N/A

Known Design Source: none

Architect/Builder: U.S. Lighthouse Board

Narrative Statement of Significance (Explain the significance of the property.)

The Atlantic Coast and Chesapeake Bay served as a major transportation corridor for commercial traffic from the early 18th through 20th centuries. Cape Henry Lighthouse marks the south side of the entrance to Chesapeake Bay and is considered one of the most important lighthouses on the Atlantic coast. The Lighthouse is the earliest cast-iron-cylinder light tower in the state of Virginia; at 163 feet, it is the tallest cast-iron-plate light tower in the United States. The world's first synchronized radiobeacon and electric oscillator air fog signal was put into commission at Cape Henry Lighthouse in May 1929.

History

The construction of the first Cape Henry tower (1792), a National Historic Landmark, was the first public works project completed by the new federal government. In 1872, cracks extending from the base to nearly the top of the tower on the north and south walls were first reported by inspectors, though only eight years earlier the tower was reported "in excellent order." The Lighthouse Board, fearing the structure would collapse, recommended a new and more substantial lighthouse be built of the first order since it was considered "one of the first lights of importance along the coast." It was also noted that the 30-year-old frame keeper's dwelling was in a "dilapidated condition," too small for the number of keepers stationed there, and too far from the tower to insure "proper attendance." An estimated cost for the new tower and quarters was $85,000 with a request to Congress for $50,000 to commence work. This request was renewed in 1873 and 1874. In 1875 the request was raised to $75,000 and renewed again in 1876. Congress finally appropriated this amount on June 20, 1878. In 1878 the Board requested an additional $25,000 which was renewed in 1879 and finally appropriated on June 16, 1880. A second request for still another $25,000 was appropriated on March 3, 1881, to complete the lighthouse station. Of these two additional appropriations, $48,063.52 was spent in 1882.

It could be argued, but not proved, that the cracks were only an excuse to build a taller first-order lighthouse for this important Cape. In the same year it was determined that additional property was needed for the desired placement of the new tower and six acres were purchased on June 10, 1880, for $3,185.80, possibly from Allen A. and Marion McCullough of Norfolk.[7]

Construction began before there was a legal deed to the said property. Construction was stalled when it was discovered that the act of Congress of June 20, 1878, included no legal

[7] Lighthouse Board, *Annual Report 1872*, pp. 38-39, *1873*, p. 42, *1874*, p. 43, *1875*, pp. 42-43, *1876*, p. 32, *1878*, p. 34, and *1879*, p. 35; Robert de Gast, *The Lighthouses of the Chesapeake* (Johns Hopkins University Press: Baltimore, 1993), p. 13; Charles M. Hatch, Jr., "The Old Cape Henry Light: A Survey Report" (unpublished manuscript report for the National Park Service, 1962); and Horace J. Sheely, Jr., "Cape Henry Lighthouse National Survey of Historic Sites and Buildings" (National Park Service, 1963), copy at National Maritime Initiative Office, Washington, D.C. The Lighthouse Board reports are silent as to who the additional property was purchased from and the name A.A. and Marion McCullough may be a confusion with the one of the contractors or they may one in the same.

authority to purchase the additional property. An act of Congress on June 16, 1880, rectified this issue, but the title is further confused by an abstract of title search which noted that the said tract was sold by the state of Virginia in 1869 and had "remained" a part of public domain known as "waste and unappropriated lands." Furthermore, the fishery rights Virginia retained when it sold land to the Federal Government for the first tower were excluded from this 1880 deed. Regardless of the legality of the deed, the new tower, located approximately 350 feet southeast of the old tower was completed in 1881.[8]

The metal work was awarded to Morris, Tasker & Company of Philadelphia on September 10, 1880, though the light-well grates around the lantern room catwalk are embossed "STEWART & STEVENS 130 North 6th ST. PHILA. PA." A. A. McCullough of Norfolk, Virginia, was given a contract to erect a pier for the landing of materials which they completed by August 1881. A steam-operated concrete-mixer had been constructed and transported to Norfolk, apparatus for the fog signal purchased, and contract for the brick fog signal building let. Delay in construction resulted from the inability of the contractor to fulfill their commitment for the ironwork as scheduled. On July 20, 1881, the erection of "necessary quarters for workmen, cement-shed, kitchen, store-room, etc., was commenced." The first shipment of cargo, consisting of 165 tons of cast iron was off loaded from a ship onto the temporary pier. As the tram crossed over the bridge leading to the pier it collapsed. Upon inspection it was found "boring-worm(s)" had weakened the piles and they were unsafe. The iron work was taken by schooner back to Norfolk and the pier collapsed the next day. It was decided to abandon the wharf and instead run the tramway to Lynnhaven Inlet, four miles away, and land construction materials there by scow.

The lighthouse tower foundation was made of seven parts cut granite, three parts very coarse sand and gravel, and one part imperial German Portland cement. The one-story brick fog signal building was completed before work stopped for the winter.[9] The following spring, the tramway was completed and the 11-foot-deep foundation finished. A 3,000- to 3,500-gallon-capacity brick cistern connected by down spouts from the roof of the fog signal building was completed to supply water for the boilers of the fog signal. The cast-iron plate sections were "neatly fitted and correctly marked" and "soon" assembled. All the plates were in place on September 15, 1881. The interior lining, stair landings, and brackets were completed on November 15. The lens was tested and the lighthouse was turned over to the keeper on December 15, 1881. Reaching a height of 163 feet, the new Cape Henry tower is the tallest cast-iron-plate lighthouse in the United States.[10]

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[8] Deed, abstract of title and a study of April 2, 1880, in the Lighthouse Site File, Virginia, No. 6 (Cape Henry), U.S. Coast Guard Records, National Archives, Washington, D.C.; and Hatch, pp. 31-33.

[9] Lighthouse Board, *Annual Report, 1880*, p.34, and *1881*, p. 37; and "Cape Henry light-station, Va." U.S. Coast Guard Records, National Archives, Washington, D.C.

[10] Lighthouse Board, *Annual Report, 1881*, p. 33, and *1882*, p. 37.

Cape Henry Lighthouse was installed with a first-order Fresnel lens. A description of these lenses states,

> *Nothing can be more beautiful than an entire apparatus for fixed light of the first order. It consists of a central belt of reflectors forming a hollow cylinder six feet in diameter and 30 inches high; below it...six triangular rings of glass, arranged in a cylindrical form, and above a crown of 13 rings of glass, forming by their union a hollow cage composed of polished glass, 10 feet high and 6 six feet in diameter. I know of no work of art more beautifully credible to the boldness, ardor, intelligence and zeal of the artist.*[11]

The lens was lit by a first class Argand burner fitted with five concentric wicks fueled with kerosene. The outer wick was five inches in diameter and the lens had a light source five-inches-wide and four-inches-high. The lens and illuminating apparatus gave a fixed white light of 6,000 candlepower. There was also a red sector to mark certain shoals. The station was also fitted with a "first-class steam-siren" or "steam fog-signal," manufactured by A. & F. Brown of New York, which was coal fired, all of which was delivered by small boats and then carried in bags on the backs of the men through the surf. The signal gave blasts of five seconds duration separated by silent intervals of 90 seconds. A 3,500-gallon water cistern and a "sand pump or drive well" for emergency use were included in the contract. The cost to complete the new station came within the $125,000 allocated ($75,000 in the first installment and $25,000 each of the two additional installments) plus the cost of new additional property.[12]

In 1883 final details such as painting and laying the tile floor in the tower were completed. An electric "call-bell apparatus" was installed in the dwelling and connected with the tower in 1883 but in 1887 a new "magneto-call-bell" was installed. This new system afforded a code of signals "specially devised for the purpose" so communication between the keepers was possible. "Extensive repairs" were made to the lantern roof in 1883. The "principal and assistant keeper's dwellings were thoroughly overhauled." In 1892 a brick oil house with capacity for 500 five-gallon cans was built as was a new summer kitchen. In 1893 station consumed 2,248 gallons of mineral oil and the fog signal operated for 256 hours and consumed 13 tons of coal. By April 1894, the oil house was considered "useless" because of shifting sand and by November it was reported to be buried under five feet of sand. It was supposedly located on the north side of the tower. In 1897 the dwellings "were put in complete order," sheet piling and a brick wall built around the oil house to keep sand from piling up on it, a new summer kitchen and new storehouse was built, as was 556 feet of new plank walks. In 1899 an audibility test of the fog signal was conducted.

In 1901 the first-class steam-operated fog siren operated for 299 hours and consumed about 17 tons of coal; in 1903 it operated for 902 hours and consumed 13 tons of coal, in 1905 it

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[11] Quote from "Cape Henry Light Station," attributed to Scott engineer Alan Stevenson.

[12] "Cape Henry Light Station," and "Cape Henry light-station, Va." U.S. Coast Guard Records, National Archives, Washington, D.C.

operated for 409 hours and consumed about 12 tons of coal, and in 1906 operated for 199 hours an consumed 6 tons of coal.[13]

A wire fence with four gates enclosed the tract in 1903. In 1905 a wooden coal house with tin roof was built, about 650 running feet of plank walk was laid, and a wooden addition to the fog signal house was made. An incandescent oil-vapor lamp fueled by vaporized kerosene in a mantle replaced the wick lamp in 1910. This change increased the candlepower from 6,000 to 22,000. In 1911 a 55mm incandescent oil vapor lamp was kept as a spare. In late 1909 or early 1910 a "new compressed air fog signal plant" was built. Building plans for this structure dated October 1909 indicate the new fog signal building was probably modified from the original coal-fired fog signal building as one section on the plan is titled "formerly the coal shed, now used for oil storage." At some later date the "radio apparatus" was placed here.

In 1909 the fog signal was a cylindrical siren diaphone which gave a two-second blast every 18 seconds. Three summer kitchens existed in 1911 as well as two storehouses. The water was supplied from Fort Story. There were no boats assigned to the station. By 1911 a branch of the Norfolk Southern railroad was built to the military station and it was used to supply the lighthouse station as well. In 1917 bids were received to construct a 3-story brick concrete building for the Weather Bureau. It is not known if this structure was ever built, but is interesting that the building then being occupied by the Weather Bureau was requested by the Bureau of Lighthouses to be used for housing purposes, as there were four keepers and only three dwellings. An incandescent electric lamp and spare generating equipment costing $3,961 was installed in 1922 which changed the beacon from a fixed white to a "group flashing light of distinctive character." This was necessary to help mariners to be able to distinguish between lights which were now common along the Atlantic Coast. The light had an intensity of 80,000 candlepower and could be seen at sea up to nineteen miles away. The original steam powered fog signal, later replaced by a compressed air system driven by 15 horsepower De La Verge oil engines which drove the compressors, was then replaced by an electric diaphone system.[14]

In the Lighthouse Board Annual Report for 1923 it stated:

> *This station is the most prominent and frequently visited station in the district, and improvements to grounds and structures should be made, but on account of the cost the service has been unable to complete them from the general maintenance appropriation.*

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[13] Arnold B. Johnson, "Upon the Exhibit of the Light-house Board at the World's Columbian Exposition Held at Chicago, 1893," *Report of the Light-house Board, 1894*, Appendix Number III (Government Printing Office, Washington, D.C., 1894), p. 245; Lighthouse Board, Annual Report, *1883*, p. 48, *1888*, p. 80 and 90, *1890*, p. 94, *1892*, p. 91, *1897*, p. 94 and 103, *1899*, p. 99 and 110, *1901*, p. 543, *1903*, p. 84, *1905*, p. 87, and *1906*, p. 72.

[14] "Cape Henry Light Station," "Cape Henry light-station, Va.," and "clipping file," U.S. Coast Guard Records, National Archives, Washington, D.C.; "Historically Famous Lighthouses," pp. 86-87; Lighthouse Board, *Annual Report, 1903*, p. 84, *1905*, p. 78 and 86, *1913*, p. 45, *1922*, p. 73, *1923*, pp 33 and 49; and "Description of Cape Henry Light Station, July 5, 1911, copy in Cape Henry Light Station file, National Maritime Initiative Office, National Park Service, Washington, D.C.

The entire reservation requires grading, sewer, and water system. All the dwellings now on the reservation should be moved to symmetrical positions with respect to tower.

A radio fog signal was installed in 1923. The world's first synchronized radiobeacon and electric oscillator air fog signal was put into commission at Cape Henry Light Station in May 1929. This "radio fog signal" sent out a characteristic signal on the 1,000 meter wave length which could be picked up by vessels equipped with radio direction finders. The vessel's position was accomplished by determining the intersection of bearings taken on two or preferably more stations established along the coast. The radiobeacon tower was 120 feet tall. The Cape Henry Light Station also employed a ½-kilowatt Marconi spark set, which sent out two dots, and a dash on 1,000 meter wave lengths for 20 seconds and then 15 seconds of silence. At some later time the station also experimented with a tube transmitting set.[15] Also in 1929 the station was described as consisting of a lighthouse, three keeper's quarters, two summer kitchens, an oil house, workshop, and storehouse, all located on eight acres of land totally valued at $124,930.[16]

A reinforced concrete fog signal testing laboratory was nearly completed costing $34,915 as of June 30, 1935. By 1939 the station was equipped with an electric lamp of 160,000 candlepower visible 19 miles at sea. The radiobeacon was audible 200 or more miles at sea and the fog signal testing laboratory, utilized by the entire lighthouse service, was in full operation by this time. From 1946 (and possibly as early as 1940) to 1956, the lower gallery of the lighthouse tower was enclosed and used by the U.S. Army as part of their harbor defense unit. In 1950 or 1951 new sanitary facilities were installed for an estimated cost of $11,000. The light in 1955 was described as a "group flashing white" light of 160,000 candlepower and a red sector of 50,000 candlepower. During construction of the Chesapeake Bay Bridge and Tunnel, Sverdrups and Parcel, consulting engineers, used the lighthouse tower to take theodolite observations. On January 15, 1982, the light and its backup system failed during a four hour period. In the same year the Coast Guard experimented with wind power to generate energy to power the station. Cape Henry Light Station was used as the test site but actual use of such a system was intended for more remote stations without electricity. The experiment was funded from a $100,000 federal grant. The Virginia Pilot Association originally intended to build a new pilot control tower near the Cape Henry Lighthouse, but to cut costs, obtained a lease from the Coast Guard to mount a new tower on the 1935 fog signal test laboratory building.[17]

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[15] Lighthouse Board, *Annual Report, 1923*, p. 34; de Gast, p. 13; and George R. Putnam, *Lighthouses and Lightships of the United States* (Boston: Houghton Mifflin Co., 1933), p. 343.

[16] *United States Lighthouse Service Annual Report* (1929), p. 5; "Cape Henry Light Station," "Cape Henry lightstation, Va.," and "clipping file," U.S. Coast Guard Records, National Archives, Washington, D.C.

[17] Lighthouse Board, *Annual Report, 1935*, p. 122; "Cape Henry Light," *Guide to Historically Famous Lighthouses in the United States*, U.S. Coast Guard 150th Anniversary of the Lighthouse Service (1939), n.p.; copy of routing slip of request for work dated October 10, 1950, Cape Henry Lighthouse file, Historian's Office, U.S. Coast Guard Headquarters, Washington, D.C.; Hans Christian Adamson, *Keepers of the Lights* (New York: Greenberg, 1955), pp. 155 and 390; "Nest To American's Oldest Lighthouse Will Be America's Newest Control Tower" (no date, statement about America's oldest lighthouse is in error); and John Stevenson, "Cape Henry lighthouse lit by wind," *Virginia-Pilot* (March 5, 1982), p. D3. Copies in Cape Henry file, National Maritime Initiative office, National Park Service,

Keepers at Cape Henry (second tower) Light Station

The keeper, probably Jay D. Edwards, was removed on October 14, 1885, "for cause after a full and fair investigation." It was stated by the lighthouse inspector that he made "false returns and statements were among the causes." Edwards stated his discharge was "on account of being a Republican." It is interesting to note that Edwards performed a heroic act in keeping the fog signal going during a storm in January 1885 and that a replacement position was filled by a man recommended by the County Chairman of the Democratic Party. Edwards turned over the lighthouse to M. L. O'Dell who was promoted to principal keeper on October 29, 1885. W. W. Edwards was second assistant keeper until he left on November 11, 1885. William G. Holland was employed as laborer on November 18, 1885. O'Dell tendered his resignation on October 22, 1890, and turned over the property to first assistant Howell as acting keeper on November 10, 1890. Utah C. Jennette was keeper at Cape Henry for 24 years (exact years unknown). In 1906 the principal keeper received $820 per year, the first assistant keeper, $550, and the second assistant keeper $500. E. H. Riggs, keeper, I. C. Meekins, first assistant keeper, and Barney Thomas, third assistant keeper, rendered assistance to a disabled hydroplane in 1921.[18]

Washington, D.C. Cape Henry Light also appeared in *Oceans* (1985) 18:10 July/August; and *New York Times* (January 5, 1927) 37:2.

[18] "Pages from the Past, Cape Henry, VA" (*Keeper's Log*, Spring 1994), p. 27; "Lighthouse still a beacon of allure" (*Daily Press*, August 18, 1989), p. B4; and Lighthouse Board, *Annual Report, 1921*, p. 60.

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Johnson, Arnold Burgess. *The Modern Light-house Service*. Washington, D.C., Government Printing Office, 1890.

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Putnam, George R. *Lighthouses and Lightships of the United States*. Houghton Mifflin Co., Boston, 1933.

Sheely, Jr., Horace J. "Cape Henry Lighthouse National Survey of Historic Sites and Buildings." National Park Service, 1963.

U.S. Lighthouse Board. *Annual Reports*, 1876-1935. Department of Commerce and Labor, 1876-1935.

Witney, Dudley. *The Lighthouse*. New York Graphic Society, Boston, 1975.

Previous documentation on file (NPS)
___ preliminary determination of individual listing (36 CFR 67) has been requested.
___ previously listed in the National Register
___ previously determined eligible by the National Register
___ designated a National Historic Landmark
___ recorded by Historic American Buildings Survey # _____
___ recorded by Historic American Engineering Record #

Primary Location of Additional Data
___ State Historic Preservation Office
___ Other State agency
_X_ Federal agency
___ Local government
___ University
___ Other
Name of repository: National Archives; Library of Congress; National Maritime Initiative, National Park Service; U.S. Coast Guard Headquarter, Historian's Office, Washington, D.C.

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10. Geographical Data

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Acreage of Property: 5 acres

USGS Quadrangle: Cape Henry, VA

UTM References:	Zone	Easting	Northing
	18	410340	4087000

Verbal Boundary Description (Describe the boundaries of the property):

As per deed dated June 10, 1880, "beginning at a post set in the ground, which first breaks South twenty degrees West (S20 W) and distant fifty feet (55 feet),...from thence running North seventy degrees West (N70 W) one hundred and thirty five feet (135 feet), thence North twenty degrees East (N20 E) six hundred and seventy feet (670 feet), thence South seventy degrees East (S70 E) five hundred and twenty feet (520 feet), thence South twenty degrees West (S20 W) six hundred and seventy feet (670 feet), thence North seventy degrees West (N70 W) three hundred and eighty five feet (385) to the place of the beginning, the said tract of land containing six (6) acres, and surrounding the tract of two acres of land conveyed to the said party...August 9th, 1790... The total area originally consisted of approximately eight acres." When Fort Story was built, the northern three-fifths of the property was cut off from the lower two-fifths containing the "old Cape Henry" lighthouse by a road. The northern portion of the original 1880 deed consists of about five acres.

Boundary Justification:

The northern two-thirds of the original 1880 deed boundary includes the "new" (1881) lighthouse tower and other contributing station structures on approximately five acres of land, completely encompassing the light station. This section of the original 1880 property is surrounded by a concrete post and iron rail fence encompassing the proposed light station boundary.

11. Form Prepared By

name/title: Ralph E. Eshelman, Maritime Historian

organization: U.S. Lighthouse Society cooperative agreement with the National Park Service National Maritime Initiative

date: March 24, 1996

street & number: 1849 C Street, N.W., Room NC400

city or town: Washington state: DC zip code: 20240

telephone: 410-326-4877 or 202-343-9508

Property Owner

name: U.S. Coast Guard, Fifth DIstrict

street & number: Federal Building, 431 Crawford St.

city or town: Portsmouth state: VA zip code: 23705-5004

telephone: (757) 398-6351

NPS Form 10-900-b
(March 1992)

OMB No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places
Multiple Property Documentation Form

This form is used for documenting multiple property groups relating to one or several historic contexts. See instructions in How to Complete the Multiple Property Documentation Form (National Register Bulletin 16B). Complete each item by entering the requested information. For additional space, use continuation sheets (Form 10-900-a). Use a typewriter, word processor, or computer to complete all items.

_X_ New Submission ____ Amended Submission

A. Name of Multiple Property Listing

Light Stations of the United States

B. Associated Historic Contexts

(Name each associated historic context, identifying theme, geographical area, and chronological period for each.)

Federal Administration of Lighthouses, U.S. Lighthouse Service, 1789-1952
Architecture & Engineering, U.S. Lighthouse Construction Types, Station Components, Regional Adaptations and Variations, 1789 -1949
Evolution of Lighthouse Optics, 1789 -1949
Significant Persons, U.S. Lighthouse Service, 1789 -1952

C. Form Prepared by

name/title Edited and formatted by Candace Clifford, NCSHPO Consultant to the NPS National Maritime Initiative, National Register, History and Education Program
Based on submissions by Ralph Eshelman under cooperative agreement with U.S. Lighthouse Society, and Ross Holland under cooperative agreement with National Trust for Historic Preservation

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date February 23, 1999